STANDARD PURLINS & GIRTS

LIGHTWEIGHT, HIGH STRENGTH C & Z SECTIONS

A Met-TECH™ GUIDE

FEBRUARY 2018

Metroll®

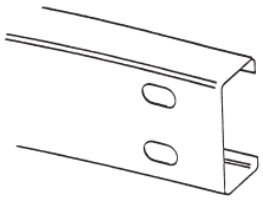
BETTER SERVICE • BETTER BUILDING SOLUTIONS

STANDARD PURLINS & GIRTS

Metroll offer a range of purlins and girts in C and Z profiles manufactured from hi-tensile G450, G500 and G550 galvanised steel, with a minimum Z350 coating. Purlins and girts are available in a range of thicknesses, cut to length, unpunched or punched to customer specifications.

Purlin and girts are available in 100, 150, 200, 250, 300, 350 and 400 sections. The range is suitable for use across commercial, industrial, rural and domestic applications.

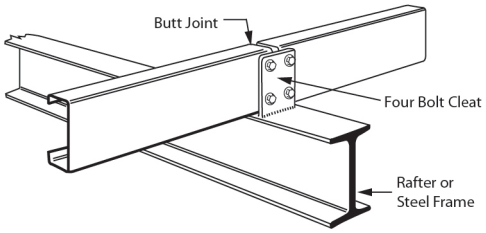
Metroll offer standard purlins and girts as well as the high performance Megaspan® range. Megaspan® has been optimised to provide capacity improvements of more than 20% over standard purlins and girts. See the **Metroll Megaspan® Purlin & Girt Design Manual** for more information.

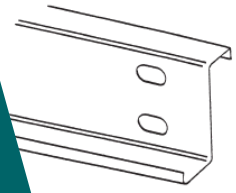


C SECTION PURLINS

C section purlins are generally manufactured from GALVASPAN® steel and are roll formed into a C section.

Metroll C section purlins are recommended for use in simple, non-continuous span construction. Suitable application includes portal frames, roofing, single bay buildings and wall cladding and flooring systems. Metroll C section purlins can also be used on multi-bay buildings in lines of simple spanning purlins and girts.





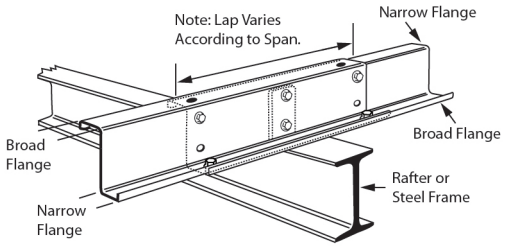
Z SECTION PURLINS

Z section purlins are generally manufactured from GALVASPAN® steel and are roll formed into a Z section. Suitable structural application includes grain handling, coal handling and manufacturing facilities.

Metroll Z Section Purlins have one broad and one narrow flange. These are designed to sit neatly and are used for lapping at internal supports. This produces structurally continuous lines of purlins for the length of the building.

Structural continuity results in improved rigidity, but lapping doubles the thickness of the purlin over the supports where bending movement is the greatest. This saves 30 - 50% of steel in purlins relative to C section purlins.

When additional purlin strength is required, Z section purlins of the same depth but greater thickness can be lapped as needed.

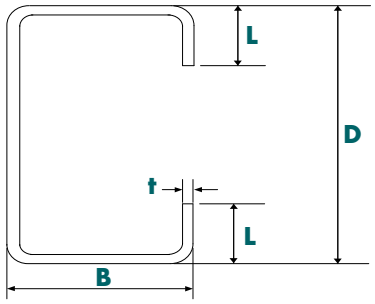


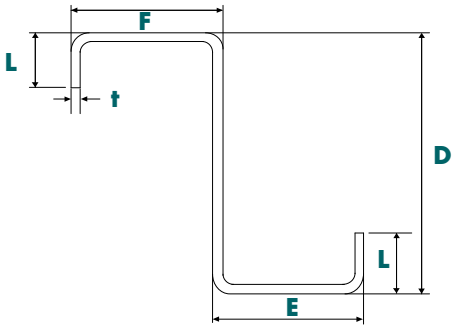
What is Met-TECH™ ?

Met-TECH™ is Metroll's Technical Resource Centre. It is the one stop shop for all of Metroll's product and technical information. Perfect for builders, contractors and specifiers to source all the information they may require. You can find other Met-TECH items on our website **www.metroll.com.au/resources**

PURLIN DIMENSIONS & PROPERTIES

C PURLIN





Z PURLIN

C & Z PURLIN SIZE & MASS TABLE

Section	Thickness mm (t)	Height mm (D)	Z PURLINS			C PURLINS		Mass kg/m
			E	F	L	B	L	
100 10	1.0	102	53	49	12.5	51	12.5	1.74
100 12	1.2	102	53	49	13	51	12.5	2.07
100 15	1.5	102	53	49	13.5	51	13.5	2.57
100 19	1.9	102	53	48	14.5	51	14.5	3.25
150 12	1.2	152	65	61	15.5	64	14.5	2.82
150 15	1.5	152	65	61	16.5	64	15.5	3.53
150 19	1.9	152	65	61	17.5	64	16.5	4.46
150 24	2.4	152	66	60	19.5	64	18.5	5.62
200 15	1.5	203	79	74	18	76	15.5	4.44
200 19	1.9	203	79	74	18.5	76	19	5.68
200 24	2.4	203	79	73	21.5	76	21	7.15
250 19	1.9	254	79	74	18	76	18.5	6.43
250 24	2.4	254	79	73	21	76	20.5	8.1
300 24	2.4	300	100	93	27	96	27.5	10.01
300 30	3.0	300	100	93	31	96	31.5	12.6
350 24	2.4	350	129	121	30	125	30	12.13
350 30	3.0	350	129	121	30	125	30	15.09
400 24	2.4	400	96	96	30	96	30	13.07
400 30	3.0	400	96	96	30	96	30	16.27

PURLIN INSTALLATION

Purlins are bolted to the primary frame by way of cleats welded to rafters or columns by a qualified steel fabricator. Cleats and the associated hole geometry are detailed in AISC Standardised Structural Connections Manual.

Bolts are usually M12 Grade 4.6 and require snug tightening for an effective connection.

To allow for minor variations in frame alignment, purlins made from GALVASPAN® steel have clearance holes 18 x 22mm to allow for greater adjustment. The generous clearance holes facilitate assembly without affecting structural performance.

Where Z purlins are lapped, additional holes are provided to ensure structural continuity.

Purlins engineered for M12 bolts must not use M16 bolts.

To minimise section rotation between supports or bridging, purlins must be installed with the top flange facing up the slope from the cleat:

- **C Sections** should be fitted on the high side of the cleat, open face directed up the slope.
- **Z Sections** should be fitted with the web on the low side of the cleat, with the top flange above it.

Fixing purlins to cladding is straightforward, the sections are very flexible until they become part of the total sheeted system. Maintain a stable framework by installing the bridging as the purlins are attached.

Bundles of roof sheeting should not be placed on un-sheeted purlins, as this can cause overloading and permanent deformation of the sections.

BRIDGING SYSTEMS

Metroll supplies a complete range of bridging components and accessories suitable for:

- Intermediate Bridging
- Fascia Bridging
- Expansion Joint Bridging
- Tie Rod Bridging
- Girt Bridging
- Ridge Bridging

The Metroll range of accessories includes; GP Brackets, Angle Connectors, Clamp Plates, Raking Girt Brackets, Turnbuckles and Locator Ends.

Metroll also supplies the unique and award winning SafeBridge® Purlin System. This system utilises a patented intermediate bridging bar and the purlin depth to support safety wire installation.

See the **Metroll Purlin & Girt Bridging Systems** brochure for more information, or visit metroll.com.au.

WELDING

The welding of purlins, girts and bridging is not recommended. Welding affects the material properties and removes the galvanised coating which may lead to premature corrosion.

CORROSION PROTECTION

AS/NZS4600 requires that cold form sections must be adequately protected from corrosion attack. The protection options range from painting through to heavy galvanised systems.

Before specifying a purlin type, the structure type; climatic conditions; proximity to salt sprays and maintenance provisions must be considered.

The zinc coating and quality controlled galvanising process used in GALVASPAN® steel ensures a high level of corrosion protection.

The two standards of corrosion protection used in GALVASPAN® steel are 350g/m^2 and 450g/m^2 zinc coating weight.

QLD

Cairns	07 4054 0888
Townsville	07 4779 8266
Mackay	07 4968 1255
Rockhampton	07 4920 0900
Bundaberg	07 4155 5999
Toowoomba	07 4634 6144
Sunshine Coast	07 5493 7872
Brisbane	07 3375 0100

NSW

Lismore	02 6622 6677
Tamworth	02 6765 4799
Newcastle	02 4954 5799
Sydney	1300 766 346
Dubbo	02 6883 4800
Wagga Wagga	02 5924 4500

ACT

Canberra	02 6298 2777

VIC

Preston	03 9480 3744
Laverton	03 8369 8300
Geelong	03 5248 2006
Ballarat	03 5335 6416
Pakenham	03 8710 9300

SA

Adelaide	08 8282 3300

TAS

Launceston	03 6335 8555

NT

Darwin	08 8935 9555

WA

Perth	08 9365 5444
Bunbury	08 9796 9796
Albany	08 9841 6966

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